

Applicant: Arnold Schneider
Serial No.: 10/826,857
Date: April 21, 2005

Listing of the Claims:

1. (Currently Amended) An apparatus for the continuous bonding and/or welding of material webs by means of ultrasound having comprising:
an ultrasonic horn configured as a rotating roller;
an anvil disposed opposite the rotating ~~shaft~~, roller;
an amplitude transformer set axially on each end of the rotating ~~shaft~~,
~~and an roller~~;
at least one ultrasonic converter attached to ~~the~~ each amplitude transformer with an energy supply, ~~characterized in that~~ ; and
the length of the rotating roller ~~equals one~~ equaling a multiple of a lambda-half wave of the an imposed oscillation ~~and a multiple thereof~~ on the rotating roller.
2. (Previously Presented) The apparatus in accordance with claim 1, wherein radial bearings are disposed between the amplitude transformer and the rotating roller.
3. (Cancelled) The apparatus in accordance with claim 1, wherein an amplitude transformer and an ultrasonic converter are furnished on both sides of the rotating roller.
4. (Previously Presented) The apparatus in accordance with claim 1, wherein the anvil is a rotating counter-roller.
5. (Previously Presented) The apparatus in accordance with claim 1, wherein the outer surface of one of the rotating roller and the counter-roller is one of smooth and patterned.

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6. (Previously Presented) The apparatus in accordance with claim 1, wherein the anvil is fixed.

7. (Previously Presented) The apparatus in accordance with claim 6, wherein the anvil extends in a tangential direction respective to the rotating roller.

8. (Previously Presented) The apparatus in accordance with claim 1, wherein the depth of the working gap between the rotating roller and the anvil is adjustable.

9. (Previously Presented) The apparatus in accordance with claim 1, wherein the pressure exerted by the rotating roller on the material web is adjustable.

10. (Previously Presented) The apparatus in accordance with claim 1, wherein the rotating roller is formed by a hollow shaft with trunnions.

11. (Previously Presented) The apparatus in accordance with claim 1, wherein the rotating roller can be one of cooled and heated.

12. (Previously Presented) The apparatus in accordance with claim 4, wherein the counter-roller is configured as an active roller with an amplitude transformer and an ultrasonic converter attached thereto.

13. (Previously Presented) The apparatus in accordance with claim 1, wherein at least two rotating rollers, arranged in tandem, contact the anvil.

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14. (Previously Presented) The apparatus in accordance with claim 13, wherein the two rollers arranged in tandem are offset to each other in the axial direction by an amount.

15. (Previously Presented) The apparatus in accordance with claim 14, wherein the amount equals a lambda-half wave of the imposed oscillation.

16. (Previously Presented) The apparatus in accordance with claim 1, wherein the diameter of the rotating roller is partially waisted.

17. (Previously Presented) The apparatus in accordance with claim 16, wherein the depth of the waist equals one part of a lambda-half wave of the imposed oscillation.

18. (Previously Presented) The apparatus in accordance with claim 1, wherein a diameter of the rotating roller is made thicker such that pressure is equally distributed along its length.

19. (Previously Presented) The apparatus in accordance with claim 1, wherein the rotating roller has a swelling.

20. (Previously Presented) The apparatus in accordance with claim 1, wherein a change in diameter of the rotating roller corresponds to a bending line.

21. (Previously Presented) The apparatus in accordance with claim 4, wherein axes of the rotating roller and the counter-roller anvil are skewed relative to each other.

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22. (Previously Presented) The apparatus in accordance with claim 1, wherein the anvil is one of a knife and a blade.